

14-1038

**United States Court of Appeals
for the Federal Circuit**

INFECTION PREVENTION TECHNOLOGIES, LLC,

Plaintiff-Appellee,

v.

LUMALIER CORPORATION,

Defendant-Appellant.

Appeal From The United States District Court
For The Eastern District Of Michigan In
10-cv-12371, Judge Avern Cohn

**APPEAL BRIEF OF PLAINTIFF-APPELLEE,
INFECTION PREVENTION TECHNOLOGIES, LLC**

Marc Lorelli
Frank A. Angileri
BROOKS KUSHMAN P.C.
1000 Town Center
Twenty-Second Floor
Southfield, Michigan 48075-1238
(248) 358-4400
Attorneys for Plaintiff-Appellee

Dated: February 20, 2014

CERTIFICATE OF INTEREST

Counsel for Plaintiff-Appellee, Infection Prevention Technologies, LLC,
certifies the following:

1. The full name of every party or amicus represented by me is:

Infection Prevention Technologies, LLC

2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:

Infection Prevention Technologies, LLC

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

None

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

Mark A. Cantor
Frank A. Angileri
Marc Lorelli
BROOKS KUSHMAN P.C.
1000 Town Center, Twenty-Second Floor
Southfield, Michigan 48075
Tel: (248) 358-4400
Fax: (248) 358-3351

TABLE OF CONTENTS

CERTIFICATE OF INTEREST	i
TABLE OF AUTHORITIES	v
STATEMENT OF RELATED CASES	vii
STATEMENT OF THE ISSUES.....	1
STATEMENT OF THE CASE.....	2
STATEMENT OF THE FACTS	4
A. The Parties	4
B. The Patents-In-Suit.....	4
1. The Prior Art	6
2. The Prosecution History Before The PTO.....	7
C. The Accused Products	13
D. The Proceedings Below	15
1. Claim Construction	15
a. “Reflected Radiation”	16
b. “Measures”	16
2. Summary Judgment Of Non-Infringement.....	17
SUMMARY OF THE ARGUMENT	18
ARGUMENT	22
A. The District Court Properly Construed Reflected Radiation As Only Radiation Reflected Back To The UV-C Device From Surfaces In A Room	22
1. The Claims Inform The District Court’s Construction.....	25

2.	The Specification Compels The District Court's Construction	26
3.	The Prosecution History Confirms The District Court's Construction	27
4.	Lumalier's Arguments On Appeal Are Misguided	28
a.	Lumalier Misunderstands Claim Differentiation	28
b.	Lumalier's Remaining Arguments Do Not Address The District Court's Construction	29
B.	The District Court Properly Construed "Measure" In Accordance With The Intrinsic Record.....	31
1.	The Claims Mandate The District Court's Construction	32
2.	The Specification Confirms The District Court's Construction	33
3.	The Prosecution History Mandates The District Court's Construction	34
4.	Lumalier Arguments	36
a.	Lumalier's Speculation Is Not Disclosed In The Patents-In-Suit	37
b.	Lumalier's New Construction	38
C.	The District Court Properly Followed The Testimony Of Lumalier's Expert And Held That There Is No Literal Infringement	39
1.	As Designed And Operated, There Are Never Three Lamps In A Row Off On The IPT Device.....	39
2.	The Teflon Diffuser Does Not Block Radiation	41
D.	The District Court Properly Dismissed Lumalier's Claims Of Infringement Under The Doctrine Of Equivalents	43

1.	Equivalence For A Sensor That Measures <i>Total</i> Radiation Is Precluded	45
a.	Lumalier Argued That Measuring Reflected Radiation Is Novel And Critical To The Invention	46
b.	A Sensor That Measures A Mixture Of Radiation Was Also Specifically Distinguished During Prosecution	47
c.	The Specification Disavowed Relying On Radiation From The Device	51
2.	Lumalier Never Presented Factual Evidence Of Equivalence	52
CONCLUSION		57
CERTIFICATE OF ELECTRONIC SERVICE		
CERTIFICATE OF COMPLIANCE PURSUANT TO FED. R. APP. P. 32(a)(7)(B)		

TABLE OF AUTHORITIES

Cases

<i>Boss Control, Inc. v. Bombardier Inc.</i> , 410 F.3d 1372 (Fed. Cir. 2005)	53
<i>Curtiss-Wright Flow Control Corp. v. Velan, Inc.</i> , 438 F.3d 1374 (Fed. Cir. 2005)	29
<i>Dole v. Elliott Travel & Tours, Inc.</i> , 942 F.2d 962 (6th Cir.1991)	54
<i>Freedman Seating Co. v. Am. Seating Co.</i> , 420 F.3d 1350 (Fed. Cir. 2005)	45
<i>Gart v. Logitech, Inc.</i> , 254 F.3d 1334 (Fed. Cir. 2001)	39
<i>Harris v. J.B. Robinson Jewelers</i> , 627 F.3d 235 (6th Cir. 2010)	42, 44, 54
<i>NTP, Inc. v. Research In Motion, Ltd.</i> , 418 F.3d 1282 (Fed. Cir. 2005)	38
<i>Pack v. Damon Corp.</i> , 434 F.3d 810 (6th Cir. 2006)	54
<i>Pharmacia & Upjohn Co. v. Mylan Pharm., Inc.</i> , 170 F.3d 1373 (Fed. Cir.1999)	46, 47
<i>Regents of Univ. of Minn. v. AGA Med. Corp.</i> , 717 F.3d 929 (Fed. Cir. 2013)	44
<i>Sage Prods., Inc. v. Devon Indus., Inc.</i> , 126 F.3d 1420 (Fed. Cir. 1997)	25, 38, 45, 53
<i>SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.</i> , 242 F.3d 1337 (Fed. Cir. 2001)	51, 52

<i>Spine Solutions, Inc. v. Medtronic Sofamor Danek USA, Inc.</i> , 620 F.3d 1305 (Fed. Cir. 2010)	50
<i>Springs Window Fashions LP v. Novo Indus., L.P.</i> , 323 F.3d 989 (Fed. Cir. 2003)	50
<i>Terlep v. Brinkmann Corp.</i> , 418 F.3d 1379 (Fed. Cir. 2005)	35
<i>Warner-Jenkinson Co. v. Hilton Davis Chemical Co.</i> , 520 U.S. 17 (1997).....	52

STATEMENT OF RELATED CASES

No other appeal in or from the same civil action was previously before this Court or any other court of appeals.

STATEMENT OF THE ISSUES

1. Whether the district court properly construed “reflected radiation” to understand and explain what it *is* and what it *is not* as explained throughout the specification and the prosecution history?

2. Whether the district court properly construed “measure” in accordance with its ordinary meaning as used in the claims, specification and prosecution history as opposed to Lumalier’s proposed special meaning construction?

3. Whether the district court properly dismissed Lumalier’s claims of literal infringement where (1) Lumalier had no evidentiary support, and (2) Lumalier ignored the claims as construed by the Court?

4. Whether the district court properly dismissed Lumalier’s assertion under the doctrine of equivalents position where (1) the specification and prosecution history prohibited the equivalent at issue, and (2) Lumalier presented no evidence of equivalence.

STATEMENT OF THE CASE

Prior to the patents-in-suit, health care facilities commonly used ultraviolet-C (“UV-C”) radiation for disinfection purposes. UV-C bulbs emit radiation that is known to kill bacteria. These treatment devices also use UV-C sensors to monitor the radiation ensuring that desired amounts are being administered.

The patents-in-suit disclose a different system. The patents-in-suit seek to sterilize an entire room, which includes surfaces such as the back of a chair that are not in direct sight of the UV-C bulbs. The patents-in-suit control UV-C operation based on the amount of radiation reflected back to the device from items in a room, as measuring this radiation can ensure that a room – including all of its surfaces – are sterilized. In the words of the patentee, measuring reflected radiation *as opposed to* radiation from the UV-C device is “novel” and “critical to effective disinfection of an area such as a room.” (A2028.) To distinguish its claims over the prior art, the patentee explained that its invention measures “reflected” radiation – not *total* radiation. (A2038, A2028, A2031-2032.) This is also not disputed.

IPT designed a system, like the prior art, that measures *total* radiation – not *reflected* radiation. Every argument that Lumalier presented to the district court was intended to change the scope of its patents from *reflected* radiation to *total* radiation. The accused product is undisputed, it includes sensors that measure *total*

radiation – not *reflected* radiation. The district court properly construed the claims as limited to this “novel” and “critical feature” of the invention and appropriately granted summary judgment of non-infringement.

STATEMENT OF THE FACTS

A. The Parties

IPT decided to enter the market for UV-C disinfecting devices and began discussions with the holder of the patents-in-suit, UVAS, LLC, in May of 2009. (A369.) During the discussions, IPT explained that its options in the marketplace included a business relationship with UVAS or alternatively designing its own UV-C disinfecting device that did not use the claims of the patents-in-suit. (*Id.*)

The negotiations over the relationship with UVAS broke down and IPT designed its own UV-C device. (A370.) With guidance from the intrinsic record of the patents-in-suit, IPT designed, built and began selling its UV-C device in the market. The IPT device included sensors that measure the total UV-C, *i.e.* radiation from the UV-C emitting device itself as well as radiation reflected from items in a room. (A371.)

B. The Patents-In-Suit

The application for U.S. Patent No. 6,656,424 (“the ‘424 patent”) was filed in the United States Patent and Trademark Office (“PTO”) on September 19, 2000. (A57.) The ‘424 patent titled “Ultraviolet Area Sterilizer and Method of Area Sterilization Using Ultraviolet Radiation” issued on December 2, 2003. (A57-64.)

The '424 patent discloses that the invention is directed to a UV-C device that emits ultraviolet radiation to sanitize a room. The Abstract explains that the

patented device utilizes sensors to determine when “a bactericidal dose of UV-C [has been] reflected back from the darkest area” of a room. (A57.) The Abstract explains: “**By relying on reflected doses rather than direct exposure**, the UVAS is able to sterilize or sanitize all surfaces within the room that are within view of an exposed wall or ceiling.” (*Id.*, emphasis added.)

Measuring amounts of UV-C reflected back to the device is representative of the amount of UV-C that reaches surfaces in a room that are not in direct sight of a UV-C sensor. Thus, the operation of a device according to the patent is completed only when “the unit has sterilized all the exposed surfaces within the room, including the primary shadows such as the back or wall side of all rails, cabinets which are not against the wall, and tables. Surfaces not directly exposed to the UV-C are sterilized by UV-C reflected from the walls and ceilings.” (A62 at 4:37-42.) The patented system “ensures that areas in relative shadow and not in direct line of sight with the unit are sterilized.” (A63 at 5:22-23.) Relying on only reflected doses ensures that all surfaces within a room – including those surfaces not in a direct line of sight of the UV-C device – have been sterilized. (A61, 2:38-42.)

The ‘424 patent repeatedly explains that its sensors measure radiation that is reflected back to the device – **not** radiation from the device.

- “Once a bactericidal dose has been reflected to all the sensors, the unit notifies the operator and shuts down. **By relying on reflected**

doses rather than direct exposure, the UVAS is able to sterilize or sanitize all surfaces within the room . . .” (A61 at 2:36-40, emphasis added.)

- “The sensors continuously **sense the level of UV-C radiation which is reflected back to the device** from 360° around the device.” (A62 at 3:30-33, emphasis added.)
- “. . . the BASIC Stamp reads data from all the individual sensors located on the array. The array senses 360 degrees at a minimum with overlapping of their window of view. **They are oriented away from the UVAS, thus measuring the dose of UV-C reflected back to the unit.**” (A62 at 4:21-25, emphasis added.)
- “The Ultraviolet Sterilizer self monitors bactericidal levels. **Reflected doses of UV-C are measured**, and the device remains activated until bactericidal levels are received. This ensures that area in relative shadow and not in direct line of sight with the unit are sterilized.” (A63 at 5:19-23.)

The ‘177 patent titled “Ultraviolet Area Sterilizer and Method of Area Sterilization Using Ultraviolet Radiation” issued on June 28, 2005. (A65-71.) The ‘177 patent is a continuation-in-part application of the ‘424 patent and includes the explanation of the reliance on measuring *reflected – as opposed to direct – radiation*. (See, e.g, A69 at 2:28-42; A70 at 4:10-16, 4:61-67).

1. The Prior Art

Ultraviolet radiation devices for sanitization were well-known prior to the applications for the patents-in-suit. For example, U.S. Patent No. 5,891,399 to Owesen (A2049-2064) “teaches a method of sterilizing an enclosed area (a room) with UV-C radiation.” (A2016.)

UV-C sanitation devices with a sensor that measures UV-C to decide when to turn off operation were also well-known prior to the patents-in-suit. U.S. Patent No. 6,433,343 (A4669-4693) to Cimino “teaches that it is known in the art to use a plurality of sensors (110D) located at multiple points within a chamber in order to ascertain when the desired amount of UV radiation has been received in all portions of the chamber. At such a point, a feedback control shuts off the radiation means.” (A2017.) Similarly, German patent DE 29812427 (A4745-4757) discloses a “sensor [that] measures the radiation and an evaluating device controls the UV output based upon the sensor measurements.” (A2016-2017.)

2. The Prosecution History Before The PTO

The ‘424 patent application was originally presented with four claims. All claims were rejected by the PTO over the prior art discussed above. (A2015-2017.) Instead of filing a written response, a telephonic interview was conducted on May 13, 2003 regarding the cited prior art references. A record of this conversation is included in the prosecution history. (A2038.) During the conversation, the Examiner and the patentee’s attorney, Mr. Killough, discussed the prior art of record.

Mr. Killough explained that **the present invention measures reflected radiation, as opposed to emitted radiation, in order to ascertain sterilization effectiveness.** The Examiner agreed that neither Cimino et al nor DE 29812427 teach measuring reflected radiation. However, since the sensor of Owesen is located on the housing, it would inherently measure some reflected radiation,

whether intended or not. Mr. Killough will file a response addressing these issues.

(A2038, emphasis added.)

As indicated, the applicant filed a written response further explaining that the “present invention” required measuring reflected radiation back to the device – “rather than” radiation emitted directly from the UV-C device. This was also described as the “novel and unique” aspect of the invention that is “critical.” The applicant stated:

The present invention is a method and device of disinfecting an area using reflected UV-C radiation. The device directs UV-C radiation within, for example a room, and at the walls and ceiling of the room. The radiation that is reflected from the walls and ceiling will disinfect objects that are not in a direct line of sight from the UV-C emitters.

* * *

Sensors that measure reflected radiation, rather than measuring UV-C radiation that is emitted directly from the emitters, control the operation of the device. Operational control by measuring reflected radiation is novel and unique to the device. **This feature is critical to effective disinfection of an area such as a room.**

(A2028, emphasis added.)

The applicant then distinguished the prior art in that each of them included sensors that received direct radiation. With arguments made to overcome German Patent DE 29812427, the applicant explained that the sensors were positioned in the line of sight from the emitters and, therefore, could not measure reflected radiation:

It is clear that from the structure of this device [of DE29812427] that the sensor 12 is positioned to receive direct radiation from the emitters, since the sensor is placed remotely from the emitters, and in direct line of sight from the upper portion of the emitters.

(A2030.)

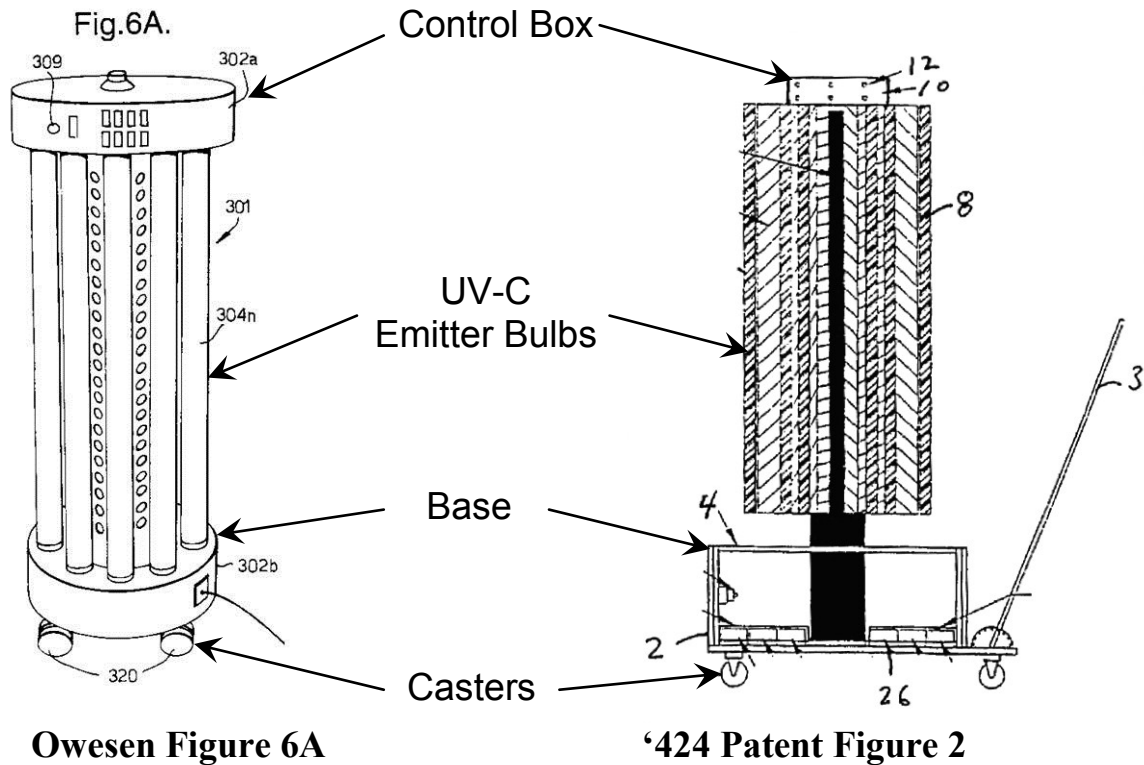
Of course, even a sensor in the line of sight from an emitter will also receive radiation reflected off of a wall, a housing, or some other object in the room.¹ Similarly, the applicant argued that Cimino et al. positioned its sensors so that they receive direct radiation and, therefore, cannot measure reflected radiation as required by the claims.

The detectors 110 are in a direct line of sight from the bulbs 101, so that they receive direct radiation. **Cimino et al. do not position the detectors for “measuring a reflection of ultraviolet-C radiation” as required by Claim 1.**

(A2030, emphasis added.)

The Examiner held that the Owesen reference **anticipated** application claims 3 and 4 of the ‘424 patent, and was used in combination to render application claims 1 and 2 obvious. (A2015-2017.) A comparison of Figure 6A of Owesen and Figure 2 of the ‘424 patent is provided below. (A2055, A58, labels added.)

¹ When an UV-C device is placed within a room or other area, there is always radiation reflected off items in the room that are present. As explained by the Examiner, there is inherently reflected radiation present “whether intended or not.” (A2038.)



Owesen Figure 6A

'424 Patent Figure 2

The '424 patent explains: "A control box 10 at the top of the unit contains . . . the UV-C sensor array." (A62, 3:4-5.) The sensors are not specified by a reference numeral in the drawings of the '424 patent.

Similarly, Owesen states: "upper portion 302a can be designed so as to comprise a UV probe sensing the output power from said UV tubes 304n." (A2063 at 6:32-38.)² As noted in the Interview Summary: "[S]ince the sensor of Owesen is located on the housing, it would inherently measure some reflected

² Like Figure 6A, upper portion 302a is identified as the outside surface of the upper structure in Figure 6C. (A2056.) The specification also states "the upper portion 302a can comprise an IR detector 309 which cuts off possible current supply to the UV lamps 304n when a human being or an animal enters the room in question." (A2063 at 6:24-27.) IR detector 309 is shown on the outside surface of the upper structure in Figure 6A. (A2055.)

radiation, whether intended or not.” (A2038.) Because of this, the applicant argued that even though the Owesen sensor received reflected radiation as noted by the Examiner, it also received direct radiation and, therefore, the Owesen sensor could not measure reflected radiation. The applicant also explained that measuring total radiation (“a mixture of reflected and direct”) does not work to sterilize a room.

The Official Action fails to explain how Owesen meets the limitation of element (c) of Claim 3 that the radiation receiver “receives reflected ultraviolet-C radiation” and that the “receiver measures said reflected ultraviolet-C radiation.” ... It is apparent that [Owesen’s] UV probe does not receive or measure reflected ultraviolet-C radiation. Even if there is incidental reflected radiation that is received by the probe (which is not indicated by Owesen), there is no indication in the reference that the reflected radiation is measured. A mixture of reflected and direct measurement by an individual sensor negates the ability to determine adequate exposure and decontamination in a changing environment.

(A2031-2032, emphasis added.) The applicant continued: “The present invention measures radiation that is directed away from the device and is reflected back.”

(A2032.) And, the applicant confirmed that the specification teaches sensors that receive only reflected radiation.

According to the specification, the sensors of the present invention receive reflected radiation. Page 6, lines 19-22. The device and method of the present invention sterilizes or disinfects surfaces “using only reflected doses.” Page 10, lines 1-3. Further, the positioning of the UV-C sensors relative to the UV-C emitting bulbs demonstrate that reflected, and not direct, UV-C radiation is received by the sensors. Page 6, lines 1-3; Figures 1-3.

(A2033.)

As a result of the office action response, independent claims 1 and 3 were allowed, as set forth below.

1. A method of sterilizing an area using ultraviolet radiation, comprising the steps of:

- (a) causing ultraviolet-C radiation to be emitted within an enclosed area;
- (b) measuring a reflection of ultraviolet-C radiation from each of multiple points within said enclosed area;
- (c) calculating an ultraviolet-C radiation level necessary to sterilize said enclosed area and comparing it with the measured reflected ultraviolet-C radiation;
- (d) terminating the emission of ultraviolet-C radiation after determining that the required minimum ultraviolet-C radiation has been reflected from each of said multiple points within said enclosed area.

3. A device for sterilizing an area using ultraviolet radiation, comprising:

- (a) a base;
- (b) a plurality of UV-C radiation emitters, wherein said plurality of ultraviolet-C radiation emitters are positioned on said base to emit ultraviolet-C radiation 360 degrees around said base and above said base;
- (c) at least one radiation sensor which is attached to said base which receives reflected ultraviolet-C radiation from multiple points in an area that is external to the device, wherein said sensor measures said reflected ultraviolet-C radiation.

(A2021-2022.)

The applicant also presented application claim 12 in its response to the objection. (A2024.) Application claim 12 did not include the “measure reflected radiation” limitation discussed above and at issue in this appeal. Application claim

12 was amended by an Examiner's Amendment as shown below to state that the sensor "receives only reflected ultraviolet-C radiation." Application claim 12 was issued as claim 14.

12. A device for disinfecting an area using ultraviolet radiation, comprising:

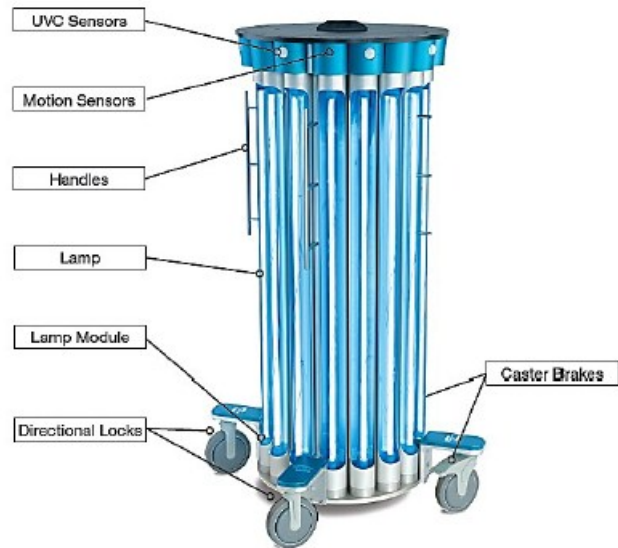
(a) at least one ultraviolet-C radiation emitter which emits ultraviolet-C radiation which is subsequently reflected by a surface in the area; and

(b) at least one ultraviolet-C radiation sensor that is positioned relative to said at least one ultraviolet-C emitter to receive only reflected ultraviolet-C radiation ~~that is emitted by said one ultraviolet-C radiation emitter and is subsequently reflected.~~

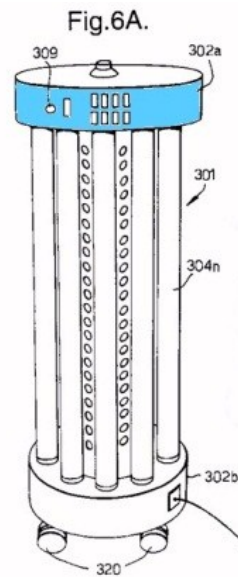
(A2040.) It should be noted that it is undisputed that a UV-C sensor that receives only reflected ultraviolet-C radiation will necessarily "measure" reflected UV-C radiation. (A2704-2705 at 125:22-126:3; A2688 at 92:2-7; A2689 at 93:15-22; A2068 at ¶ 8; A3209-3210 at 26:11-27:3.) It is also undisputed that a UV-C sensor that receives reflected and direct radiation cannot distinguish between the two "types" of UV-C radiation and, therefore, cannot measure reflected radiation. (*Id.*)

C. The Accused Products

The accused product, the IRS 3200m ultraviolet device ("IPT device"), is illustrated below, next to the prior art Owesen design. (A2781; A2055, coloring added.)



IPT Device



Owesen Design Figure 6A

Like the Owesen design, the IPT device includes a number of UV-C bulbs arranged around a base that is designed to be moved by the use of casters. As explained by the Examiner, “Owesen desires to achieve complete irradiation of all exposed surfaces in the room (col. 5, lines 55-56) and to achieve the ‘best possible and most intense UV radiation of the room surfaces’ (col. 5, lines 27-29.)” (A2016.) Owesen includes a UV-C sensor located in the “upper portion 302a” designated in blue above. The IPT device uses similarly positioned UV-C sensors. In the IPT device, the UV-C sensors are angled downward in order to monitor the UV-C field from the emitters. (A2674 at 17:13-17; A2785-2786; A2800; A2814; A2828.) The IPT device includes more bulbs than can be powered at one time. The measurements from the sensors of the IPT device are used to turn the UV-C emitters on and off. The IPT device does this to create the most uniform and

strongest UV-C field strength possible. IPT refers to this as its “Balanced Field Technology.” (A863-864, A2066-2068.) For example, if one sensor reports a disproportionally low value because one of the three UV-C bulbs near it is aged or damaged, then the IPT device turns on an adjacent UV-C bulb. Similarly, if one sensor receives a disproportionally high value, the power to one or more of the associated emitters is moved to power a different emitter on the device. The objective of the IPT device is to use the available power around the device as efficiently as possible.

D. The Proceedings Below

1. Claim Construction

The Court entered a schedule involving claim construction, including disclosure of evidence supporting the parties’ positions. (A836.) The parties submitted opening and rebuttal claim construction briefs. (A1924 and A2083; A2109 and A2132.) On July 24, 2012, the Court held a *Markman* hearing.

The Court subsequently issued a 40-page Claim Construction Order. The Order includes a background on the technology of the patents and an overview of the prosecution history. (A2-6.) The Order includes a comprehensive overview of the law on claim construction. (A7-12.) Then, for each term, the Order goes into great detail regarding the intrinsic record and also addresses the arguments made by the parties to the Court.

As explained in the complaint, all of the claims of the patents-in-suit require a “measurement” of “reflected UV-C radiation” or a surrogate.³ (A730-747.) Lumalier is appealing the construction of only these two terms, which are addressed in detail below.

a. “Reflected Radiation”

Pages 12-21 of the Claim Construction Order are devoted to the construction of “reflected radiation.” (A12-21.) The district court properly construed this limitation as: “radiation that is reflected from items in an area as opposed to radiation that is from the UV-C device directly.” (A21.) The district court rejected Lumalier’s proposed construction of “any ultraviolet-C radiation that has bounced off any surface.”

b. “Measures”

Pages 21-25 of the Claim Construction Order are directed to the construction of “measures” or “measuring.” (A21-25.) The district court properly construed this limitation as: “determining the quantity of [something].” (A25.) The district court rejected Lumalier’s proposed construction of “generating data associated with.”

³ Claim 14 of the ‘424 patent, instead of using the language “measuring reflected radiation” states that the sensor “receive[s] only reflected radiation.” These limitations are basically the same because when a sensor receives only reflected radiation, it necessarily measures reflected radiation.” (A1380.) However, a UV-C sensor that receives reflected and other radiation does not measure reflected UV-C, it measures the total radiation received. (See, e.g., A2068.)

2. Summary Judgment Of Non-Infringement

Upon issuance of the district court's Claim Construction Order, Lumalier resisted a finding of non-infringement. Lumalier presented three expert reports that constantly changed positions. (A2656-2660.)

IPT moved for summary judgment on January 8, 2013 explaining that there was no material dispute as to the structure and operation of the IPT device, and summary judgment of no infringement was appropriate. (A2641-2669.) "IPT's device cannot differentiate between reflected and direct radiation" and is designed to measure *total* radiation – not *reflected* radiation. (A46.) Relying on the testimony of Lumalier's expert, the court explained: "Lumalier does not dispute that a device which measures both reflected and direct radiation, and which cannot distinguish between the two, does not infringe." (A48.)

Despite its expert's testimony, Lumalier responded with several attorney arguments. (A2960-87.) The district court addressed each argument in its May 9, 2013 Order and granted summary judgment of non-infringement. (A43-56.)

SUMMARY OF THE ARGUMENT

It is undisputed that the IPT device includes UV-C sensors that measure total UV-C radiation, *i.e.*, radiation from the UV-C device directly combined with reflected radiation. The amount of reflected radiation is never determined by the IPT device. Every argument presented by Lumalier to the district court is a veiled attempt to read “measuring reflected radiation” on a sensor that generates a signal specifying the quantity of total radiation, *i.e.*, reflected and direct radiation. The measurement of total radiation including reflected and direct radiation is not a measurement of reflected radiation – under any reasonable construction. As an example, if person A and person B get on a scale, the reading on the scale is not measuring the weight of person A. If one is to measure the thickness of a book and uses a tape measure to measure the height of a stack of ten books, no one would consider that a measurement of the height of the book in question. Lumalier’s argument makes no logical sense in the abstract, and clearly makes no sense based on the intrinsic record.

In the claims, the majority of claims of the patents-in-suit require that the device “receive reflected radiation” and separately “measure reflected radiation.” (*See, e.g.*, claim 1 of the ‘424 patent.) The amount of reflected radiation received by the device is used to determine when to terminate UV-C treatment when “said enclosed area” is “sterilize[d].” (*Id.*)

In the specification, the “Summary of the Invention” emphasizes the importance of reflected radiation **rather than** direct radiation. “Once a bactericidal dose has been reflected to all the sensors, the unit notifies the operator and shuts down. **By relying on reflected doses rather than direct exposure**, the UVAS is able to sterilize or sanitize all surfaces within the room that are within view of an exposed wall or ceiling.” (A61 at 2:36-42, emphasis added.) Without reliance on “reflected doses rather than direct exposure,” the device cannot determine when all items in a room are sterilized.

In the prosecution history, the applicant “explained that the present invention **measures reflected radiation, as opposed to emitted radiation**, in order to ascertain sterilization effectiveness.” (A2038, emphasis added.) Unfortunately, Lumalier ignored the following explanation of its invention, both in its presentation to the district court and in this appeal.

The present invention is a method and device of disinfecting an area using reflected UV-C radiation. The device directs UV-C radiation within, for example a room, and at the walls and ceiling of the room. The radiation that is reflected from the walls and ceiling will disinfect objects that are not in a direct line of sight from the UV-C emitters.

* * *

Sensors that measure reflected radiation, rather than measuring UV-C radiation that is emitted directly from the emitters, control the operation of the device. Operational control by measuring reflected radiation is novel and unique to the device. This feature is critical to effective disinfection of an area such as a room.

(A2028.)

The applicant continued distinguishing prior art that included sensors that “are in a direct line of sight from the bulbs” as those sensors are “not position[ed] . . . for ‘measuring a reflection of ultraviolet-C radiation’ as required by Claim 1.” (A2030.)

The applicant also specifically distinguished claim 3 over the Owesen prior art reference. The applicant explained that even though the Owesen sensor received reflected radiation as noted by the Examiner, it also received direct radiation. Therefore, the sensor could not measure reflected radiation as required by element (c) of claim 3. (A2031-32.) The applicant continued by stating that “mixture of reflected and direct measurement negates the ability to determine adequate exposure” as taught in the ‘424 patent. (*Id.*)

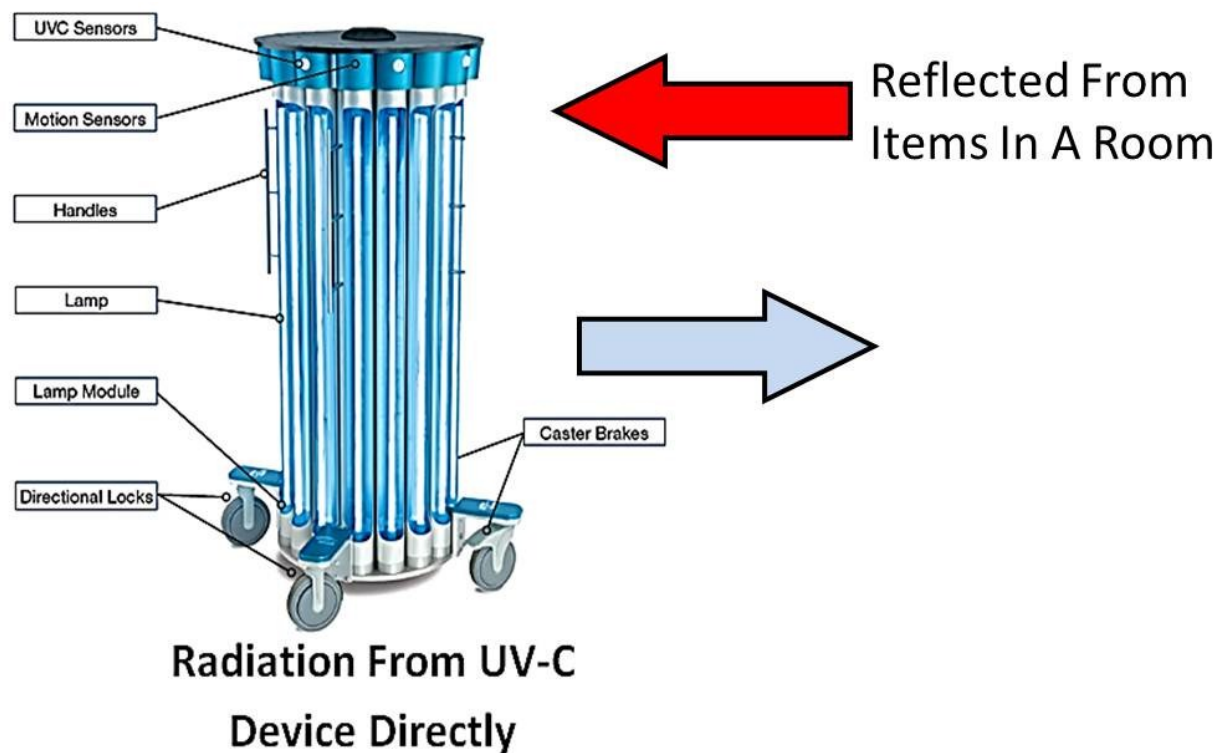
The district court properly construed both “measure” and “reflected radiation” in accordance with the intrinsic record. (A1-42.) The district court also appropriately considered all positions presented by Lumalier and entered summary judgment of non-infringement. (A43-55.) On appeal, Lumalier largely ignores the district court’s claim construction and summary judgment Orders. Instead, Lumalier twists its infringement positions presented to the district court below, and asks this Appellate Court to reverse the summary judgment ruling. Not only is it improper to present new theories on appeal that were not presented below, but Lumalier’s new-found positions have no merit or evidentiary support. Indeed,

every argument presented by Lumalier is nothing more than a veiled attempt to remove measuring reflected radiation from the claims. The district court properly granted summary judgment of non-infringement.

ARGUMENT

A. The District Court Properly Construed Reflected Radiation As Only Radiation Reflected Back To The UV-C Device From Surfaces In A Room

The district court properly construed “reflected ultraviolet-C radiation” as “radiation that is reflected from items in an area as opposed to radiation that is from the UV-C device directly.” (A21.) As illustrated in the figure below, the radiation in red is the reflected radiation, as opposed to the “radiation that is from the UV-C device directly.” (A2654, modified.)



On pages 14-15, Lumalier concedes that the district court’s construction is correct. Lumalier states:

There is no dispute about whether or not the term “reflected” radiation encompasses “direct” radiation. The intrinsic evidence consistently distinguishes UV-C radiation that is reflected off items in a room from radiation that is directly received from a UV-C emitter, i.e., radiation that does not bounce off any intervening surface. Such a distinction is clearly in accordance with an ordinary meaning of the respective terms.

Lumalier is unable to dispute this clear fact, so it argues that the Court’s construction disclaimed an embodiment. On page 14, Lumalier states: “The district court concluded the Applicant disclaimed embodiments wherein both reflected and direct radiation may be received by a sensor. (A20, ll. 18-20.)” ***First of all***, there is no such embodiment disclosed in the specification. ***Second***, Lumalier’s asserted understanding of the district court’s Claim Construction Order is unfounded. The statement cited in the district court’s order merely confirms “the specification and prosecution history clearly support a construction of ‘reflected radiation’ that excludes radiation directly emitted from the device.” (A20.)

To the extent that Lumalier is referencing statements made in the district court’s Summary Judgment Order, Lumalier fails to appreciate that the patents-in-suit have ***two categories of claims***. The first category includes claims 6 and 14 of the ‘424 patent and recites that the sensors “receive only reflected radiation.” For these claims, including claim 14 reproduced above on page 13, the sensor cannot

receive radiation other than reflected radiation. Lumalier cannot and does not dispute this.

The second category includes the following asserted independent claims: 1 and 3 of the '424 patent, claim 1 of the '177 patent. For these claims, the sensors can certainly receive radiation that is not reflected. But, these claims include an additional limitation. These claims require that the device “measure” reflected UV-C radiation. As explained throughout the specification and prosecution history, this limitation does not permit the measurement of “all” or “total” radiation, but requires a measurement of “reflected” radiation.

Unlike Lumalier’s presentation on appeal, the district court properly understood these issues. For example, on page 5 of its Summary Judgment Order, the district court stated:

All alleged infringed claims say reflected radiation is “measured,” except claim fourteen of the '424 patent which uses “receive” instead of “measure.” It says “at least one ultraviolet-C radiation sensor that is positioned relative to said at least one ultraviolet-C emitter to receive only reflected ultraviolet-C radiation.”

(A47.)

Thus, when the district court held that, “IPT’s device does not solely receive or measure reflected radiation, and there is no genuine dispute concerning this. There is no infringement here”, the statement was made so as to address both categories of asserted claims. (A51-52.)

Lumalier’s appeal does not explain why the district court’s claim construction is improper, but Lumalier continues to seek an improper construction for “reflected radiation” on appeal. In essence, Lumalier seeks ambiguity so that it can argue that radiation from the device itself is somehow reflected radiation. Lumalier’s appeal of the claim construction of “reflected radiation” should be rejected.⁴

1. The Claims Inform The District Court’s Construction

Lumalier covertly argues that “reflected radiation” can include radiation from the device itself. That assertion is contrary to the entire teaching of the patent and would render the key claim term “reflected” meaningless. (A13-14.) Here, the present invention directed to a device or method of sterilizing an area – radiation from the device directly to the device (without being transmitted to the area) cannot sterilize an area.

⁴ To the extent that Lumalier presents a new claim construction for the first time on appeal, this construction should be ignored. “Appellate courts do not consider a party’s new theories, lodged first on appeal. In short, this court does not ‘review’ that which was not presented to the district court.” *Sage Prods., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1426 (Fed. Cir. 1997) (declining to consider a patentee’s new construction of terms on appeal of summary judgment of noninfringement). Regardless, Lumalier’s new alternate construction of “radiation that is reflected from items in an area” is merely intended to add ambiguity to the district court’s construction so that Lumalier can argue that parts of the UV-C device itself are items in the area.

2. The Specification Compels The District Court's Construction

The patents-in-suit disclose a system to ensure sterilization of all surfaces in a room, including “shadows such as the back or wall side of all rails, cabinets which are not against the wall, and tables.” (A62, 4:39-42.) To accomplish this, the system measures the amount of reflected radiation as that value is representative of the UV-C radiation that reaches “[s]urfaces not directly exposed to the UV-C.” (A62, *Id.*) By “relying on reflected” amounts “rather than direct exposure,” the patented system “ensures that areas in relative shadow and not in direct line of sight with the unit are sterilized.” (A63, 5:22-23.) The specification makes clear that sensors measure radiation reflected back to the device for this purpose. (A61, 2:38-42; A62, 3:30-32; A63, 5:19-25.) The district court explained:

The specification defines both what “reflected radiation” is, and what it is not. It is not radiation that is directly emitted from the device; it is radiation that is “reflected back” to the device. Lumalier’s proposed construction does not take into account this limitation.

(A15.)

In the face of this intrinsic record, on page 19, Lumalier cites a portion of the specification never presented to the district court⁵ and argues that modifying the unit “to increase reflectance off the unit itself” somehow changes the meaning of “reflected radiation.” The specification citation by Lumalier does not refer to this radiation as “reflected radiation” as used in the claims. Furthermore, such an implication would be at odds with the great weight of the intrinsic record. In fact, the portion of the specification cited explains that this modification can improve the time required for the device to sterilize the “test surface [that] was not in direct line of sight of the UVAS and received only reflected doses of UV-C.” (A62, 4:60-61.) Clearly, the “reflected doses of UV-C” refer to the reflection off of items in the room, and not reflectance off the device itself. The test surface is not in direct line of sight of the device and, therefore, the term “reflected doses” is not referring to any radiation from the device itself. The purpose of the invention is to sterilize the room – not the UV-C device.

3. The Prosecution History Confirms The District Court’s Construction

Lumalier ignores the patentee’s clear explanation of the invention in its appeal. As explained: **“The present invention is a method and device of**

⁵ The district court also ordered the parties to identify all evidence being presented for claim construction purposes. (A836, A1916.) The citation to column 4, lines 43-53 relied on by Lumalier was never identified nor argued to the district court. (A2094-2097; A2141-2145.)

disinfecting an area using reflected UV-C radiation” and this radiation is “reflected from the walls and ceiling” of a room. (A2028.) And this radiation is “critical to ensure disinfection of an area such as a room.” (*Id.*) The applicant continued: “**Sensors that measure reflected radiation, rather than measuring UV-C radiation that is emitted directly from the emitters, control the operation of the device.**” (A2028, emphasis added.) The prosecution also made clear that only reflected radiation is received by the sensors as described in the specification. Indeed, the “positioning of the UV-C sensors relative to the UV-C emitting bulbs demonstrate that reflected, and not direct, radiation is received by the sensors. Page 6, lines 1-3; Figures 1-3.” (A2033.) Simply, the prosecution history made clear that reflected radiation is radiation reflected off of items in a room back to the device and not from the device directly.

4. Lumalier’s Arguments On Appeal Are Misguided

a. Lumalier Misunderstands Claim Differentiation

On page 20 of its brief, Lumalier claims: “The district court further erred in failing to properly consider the doctrine of claim differentiation.” Without support, Lumalier argues that “the district court’s construction effectively inserts the word ‘only’ into every claim, thereby rendering that word superfluous and meaningless in the claims where it is already present.” The Court’s construction does no such thing.

As explained by the district court: “Certain independent claims of the ‘424 patent recite ‘receive reflected ultraviolet-C radiation’ and others recite ‘receive only reflected ultraviolet-C radiation.’” (A19.) Lumalier argues that these claims should have different scope. Lumalier fails to appreciate that these limitations do have a different scope. One set would allow “receiving” of other types of radiation, the other set would not.

Lumalier also fails to appreciate that the limitations at issue in this case concern “measuring” – not “receiving.” “Measuring” and “receiving” are two very different terms. And, there is no claim differentiation argument related to “measuring reflected radiation.” The district court properly analyzed Lumalier’s argument and the relevant precedent. *See Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1380-81 (Fed. Cir. 2005). The district court explained that “claim differentiation cannot broaden claims beyond their correct scope.” (A20.) In its appeal, Lumalier ignores the differences between “receiving” and “measuring” and, as noted by the district court, cannot explain why “the addition of ‘only’ in certain claims” concerning receiving has anything to do with measuring. (A21.)

b. Lumalier’s Remaining Arguments Do Not Address The District Court’s Construction

On page 16, Lumalier acknowledges that “an embodiment described throughout the specification” involves a sensor that receives only reflected

radiation and, therefore, measures reflected radiation. In its appeal, Lumalier then speculates about “additional modes,” but the specification does not describe nor suggest such an embodiment.

The specification explains that the invention, “[b]y relying on reflected doses rather than direct exposure, the UVAS is able to sterilize or sanitize all surfaces within a room.” (A61 at 2:38-42.) The specification teaches measuring reflected doses *rather than* direct radiation – the specification never even implies measuring reflected doses *in addition to* direct radiation. The prosecution history confirms that the specification and the “present invention” rely on only reflected doses. (A2028, A2033.) This cannot be disputed by Lumalier.

Lumalier also argues that the prosecution history somehow does not support the district court. Lumalier acknowledges that “each of the cited prior art references were distinguished on grounds that they could not measure reflected radiation at all.” (p. 17.) This was true for Owesen which included a UV-C sensor located on the top portion of the device – just like the IPT device. The applicant argued that if Owesen’s sensor produced a “mixture of reflected and direct measurement” as explained by the Examiner, it did not “measure reflected radiation.” (A2031-2032; A2038.)

Lumalier does not deny this fact. Instead, Lumalier attempts to belatedly distinguish Owesen on other grounds. On page 18, Lumalier argues to distinguish

“the target surfaces in Owesen (forced stream of moving air particles) from the static target surfaces of the present invention (stationary walls and surfaces in a room).” **This is not true.** Owesen discloses its invention as a “means to render full UV radiation of all surfaces/objects in a room.” (A2061, 2:4-5.) The Examiner even stated to the applicant: “Owesen desires to achieve complete irradiation of all exposed surfaces in the room (col. 5, lines 55-56) and to achieve the ‘best possible and most intense UV radiation of the room surfaces’ (col. 5, lines 27-29.)” (A2016, Office Action.) The sterilization target in Owesen is the same as in the patents-in-suit. Lumalier cannot deny that the applicant told the Patent Office that if a sensor received both direct and reflected radiation, the sensor: (1) did not measure reflected radiation, and (2) would not work to sterilize a room which includes surfaces not in direct view of the UV-C bulbs.

B. The District Court Properly Construed “Measure” In Accordance With The Intrinsic Record

The district court properly construed “measure” as “determining the quantity of [something].” (A25.) Lumalier sought a special meaning construction of “measure” designed to cover devices that measure total radiation, *i.e.* reflected radiation and radiation from the device directly.

1. The Claims Mandate The District Court's Construction

As noted by the district court, it began “its analysis with a review of the claims.” (A22.) The claims clearly indicate that “measures” is properly understood as “quantifies.” (A23.) Claim 1 of the ‘177 patent provides such an example:

1. A method of sterilizing an area using ultraviolet radiation, comprising the steps of:

(a) causing ultraviolet-C radiation to be emitted from multiple positions within an enclosed area;

(b) measuring a reflection of ultraviolet-C radiation from the multiple positions within said enclosed area;

(c) calculating an ultraviolet-C radiation reflectance level necessary to sterilize said enclosed area and comparing it with measured reflected ultraviolet-C radiation; and

(d) terminating the emission of ultraviolet-C radiation after determining that the required ultraviolet-C radiation reflectance level has been reflected from the multiple positions within said enclosed area.

(A71.)

Indeed, if the amount of reflected radiation is not determined, the remaining elements of the claims, particularly termination (d), make no sense. One must know the quantity to determine when the amount necessary to sterilize has been reached. In addition to such an observation, the district court looked at more claim language involving the “measurement.” In its detailed analysis – ignored by Lumalier – the district court held: “These terms – minimum, cumulative, and level

– all relate to the quantity of something; to say that they represent data in the abstract [as urged by Lumalier] is too broad a construction.” (A22.)

Lumalier must admit that “measure” is properly understood as “quantify” in the claims. In fact, both parties agreed that the “cumulative level of reflected ultraviolet-C radiation” means “the accumulated total quantity of reflected ultraviolet-C radiation.” (A2106, emphasis added.) Lumalier itself even presented a proposed construction for step (d) in claim 1 of the ‘424 patent that included quantification: “terminating, from the at least two locations in the enclosed area, the emission of ultraviolet-C radiation after determining that the required amount of ultraviolet-C radiation has been reflected.” (A42, emphasis added.) “Measuring” means determining an amount or quantity in the context of the claims.

2. The Specification Confirms The District Court’s Construction

The specification makes clear that “measure” means determining the amount or quantity of reflected radiation. The specification states: “the unit will need to stay activated to allow a bactericidal dose of UV-C to be reflected back to the unit from all directions.” (A62 at 4:31-33.) A dose is an amount of something, such as an amount of medicine or “the quantity of radiation administered.” (A2131.) And, the Summary of the Invention claims reliance on “reflected doses” and not “direct exposure.” (A61 at 2:36-42.)

At the district court, Lumalier pointed only to column 4, lines 21-26 to argue that data is read from the sensors. (A21.) Lumalier argued: “That data is then processed by a microcontroller to determine the amount of light received.” (A2098). The district court properly addressed the passage and explained that: “Just because the BASIC Stamp reads ‘data’ from the sensors does not mean the sensors had not already quantified the radiation received.” (A24.) Indeed, the specification states: “Each sensor converts the measurement of the level of radiation to a voltage output.” (A62 at 3:33-34.) The specification states clearly that the *sensors* determine the amount of reflected radiation (measurement of the level of radiation), not the BASIC Stamp as argued by Lumalier.

3. The Prosecution History Mandates The District Court’s Construction

At bottom, Lumalier is attempting to read “measuring reflected radiation” on a sensor that generates a signal specifying the quantity of total radiation, *i.e.*, reflected and direct radiation. The measurement of total radiation including reflected and direct radiation is not a measurement of reflected radiation under its ordinary meaning. Lumalier’s argument makes no logical sense.

On appeal, Lumalier still fails to address the key statements in the prosecution history, and instead seeks an ambiguous construction to erase its clear representations made during the prosecution history. (Brief, pp. 21-23.) Lumalier’s appeal brief completely ignores the following clear statement: “Sensors

that measure reflected radiation, rather than measuring UV-C radiation that is emitted directly from the emitters, control the operation of the device.” (A2028.) Indeed, such a measurement was described as “novel” and “critical to effective disinfection of an area such as a room” by the applicant. (*Id.*) These statements are binding on Lumalier. Lumalier cannot change its invention during litigation. *See, e.g., Terlep v. Brinkmann Corp.*, 418 F.3d 1379, 1383-84 (Fed. Cir. 2005).

The applicant also explained that a sensor that received both direct and reflected radiation would not measure reflected radiation. (A2031-32.) And, the applicant further explained that a sensor that produced a “mixture of reflected and direct measurement” will “negate[] the ability to determine adequate exposure.” (A2032.) These statements are binding on Lumalier. Even on appeal, Lumalier seeks an ambiguous construction as opposed to addressing the intrinsic record regarding the claim term “measuring.”

The district court fully considered the prosecution history, which is ignored by Lumalier for this construction. The district court held: “The prosecution history strongly supports IPT’s proposed construction” and explained. (A24-25.)

The prosecution history strongly supports IPT’s proposed construction. During prosecution, the applicant explained that measuring reflected radiation, rather than radiation that is emitted directly, is “novel and unique to the device” and “critical” to the operation of the device. (Doc. 53-4, Ex. C, p. 61.) Also during prosecution, applicant distinguished the prior art of Owesen on the

grounds that it received reflected radiation in addition to direct radiation, and therefore, could not *measure* reflected radiation. (Id., Ex. C, pp. 64-65) Applicant stated: “A mixture of reflected and direct radiation by an individual sensor negates the ability to determine adequate exposure and decontamination in a changing environment.” (Id.) Thus, as persuasively argued by IPT in its brief and at oral argument, if the sensor of Owesen received both reflected and direct radiation, it would necessarily *generate data* associated with the reflected radiation, even though it can not measure it. It would not be able to *quantify* the reflected radiation, though, because of the incidental presence of direct radiation and the inability of the device to distinguish between the two.

Lumalier is bound by its arguments made during prosecution to distinguish Owesen. It cannot now argue that “measure” means to “generate data” because if it had done so during prosecution the claims would not have been allowed.

4. Lumalier Arguments

Lumalier argues on appeal that “the district court ignored the specification and instead relied on an extrinsic dictionary – Webster’s New College Dictionary II – definition that is inconsistent with the plain and ordinary meaning as understood by those of skill in the art.” (Lumalier Br, p. 10). This is simply not true. (A21-25.) The district court properly addressed the intrinsic record including the claims, the specification, and the prosecution history – which are largely ignored in Lumalier’s appeal.

a. Lumalier’s Speculation Is Not Disclosed In The Patents-In-Suit

In the face of this strong intrinsic record, on pages 21-22, Lumalier cites a portion of the specification never presented to the district court⁶ and argues that “a voltage output provided by individual sensors is *representative of* a quantity of UV-C radiation received by the respective sensor, but nowhere is it suggested that a specific quantity of radiation is determined by the sensors.” Lumalier states that this output is a “proxy for the quantity” as opposed to a specific numerical quantity with units.

Lumalier simply assumes that the district court’s construction requires a specific numerical quantity with units. The district court’s construction does no such thing, all that is required is “determining the quantity of” reflected radiation. Whether that is done with numerical units or a “proxy” is irrelevant. Both determine the quantity of reflected radiation – which has never been disputed in the district court.

And importantly, Lumalier’s new-found argument does not match its proposed construction. Data that “represents” the “quantity” of reflected radiation is quite different from data “associated with” reflected radiation.

⁶ The district court also ordered the parties to identify all evidence being presented for claim construction purposes. (A836, A1916.) The citation to column 3, lines 29-44 relied on by Lumalier on appeal was never identified nor argued to the district court. (A2097-2098; A2146-2151.)

b. Lumalier's New Construction

Lumalier seeks a construction of “associated with” but has failed to provide any support for this construction. As outlined by the district court, and not challenged by Lumalier, Lumalier’s proposed special meaning construction allows for this ambiguity and is not supported by the intrinsic record. (A24-25.) Indeed, Lumalier’s construction removes what is “novel and unique to the device,” that which is “critical,” and is contrary to what was required in order for the PTO to allow the claims. (A25.)

On appeal, Lumalier improperly presents a new, never before present construction for “measure.” *Sage Prods.*, 126 F.3d at 1426 (declining to consider a patentee’s new construction of terms on appeal of summary judgment of noninfringement). *See, NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1296 (Fed. Cir. 2005) (“Presenting proposed claim constructions which alter claim scope for the first time on appeal invokes the doctrine of waiver as to the new claim constructions.”). Again, Lumalier’s new alternate construction of “generating data associated with a quantity of something” adds ambiguity. Lumalier has never advised the district court or the appeals court what it means to be “associated with.” Simply, Lumalier seeks to argue that measuring total radiation is the same as measuring reflected radiation. Claim construction is intended to “understand and explain” the claims,

not create ambiguity as proposed by Lumalier. *Gart v. Logitech, Inc.*, 254 F.3d 1334, 1339 (Fed. Cir. 2001) (citations omitted).

C. The District Court Properly Followed The Testimony Of Lumalier's Expert And Held That There Is No Literal Infringement

At the threshold, Lumalier argues that “The district court’s summary judgment Order fails to identify on a claim-by-claim basis which claim limitations are allegedly missing in the accused products.” (Lumalier Br, p. 24.) That is not accurate. The summary judgment Order states that all but one of the allegedly infringed claims include “measuring reflected radiation” as a limitation. (A47.) The Order further notes that claim 14 of the ‘424 patent requires that the sensor “receives only reflected ultraviolet-C radiation.” (*Id.*) The sensors of the accused IPT device receive an indeterminate and changing mixture of direct and reflected radiation, and simply cannot measure the reflected portion of the radiation. (A3211, 92:2-7; A3212, 93:15-22.) The district court held that not meeting *at least* these limitations are the basis for its summary judgment ruling.

1. As Designed And Operated, There Are Never Three Lamps In A Row Off On The IPT Device

To the district court, Lumalier argued that there was nothing that prevented *three adjacent UV-C emitters* on the IPT device from being off. (A2971-2974.) Indeed, Lumalier framed the factual question to the district court as “whether or not the accused products operate with three or more adjacent emitters turned off.”

(A2971.) Lumalier has no evidence of this ever happening with the IPT device. Instead, Lumalier presented a hypothesis as to how the IPT device may malfunction in certain unlikely situations. (A2971-2974.) In response, IPT properly explained that Lumalier’s hypothetical infringement required: (1) a battery malfunction, and (2) operating the device contrary to its instructions. (A3186.) Even with this, it is still speculation that three adjacent emitters would ever be off at the same time.

The district court properly considered and rejected Lumalier’s infringement argument. The district court held that “Lumalier’s hypothetical does not create a genuine dispute” and explained:

In *Ball Aerosol & Specialty Container, Inc. v. Ltd. Brands, Inc.*, the Federal Circuit said literal infringement cannot rest on a possibility even though the product was reasonably capable of being put into a claimed configuration, absent specific instances of infringement. *Ball Aerosol & Specialty Container, Inc. v. Ltd. Brands, Inc.*, 555 F.3d 984 (Fed. Cir. 2009.)

(A52.)

Unable to take issue with the decision of the district court, Lumalier presents a different argument on appeal. Lumalier states: “It is simple physics that a sensor assembly above a disabled emitter cannot literally receive ‘radiation that is from the UV-C device directly.’” (Lumalier Br, p. 26.) There is no citation as this is not true and is not what Lumalier argued below. (A2973-2974.) Lumalier’s expert, Dr. Peters, admitted that even if a bulb is off below a sensor, the sensor still

receives radiation directly from adjacent bulbs. Peters' Expert Report states: "The downward tilt of the sensor face permits some light from the lamp below and those on either side to illuminate it." (A2800; A2677 at 46:2-22; 3074-75 at ¶¶162-163.)

Lumalier's new argument contrary to the record below should be rejected.

2. The Teflon Diffuser Does Not Block Radiation

It is not disputed that the Teflon diffuser is part of the sensor and is commonly used in sensors to increase its field of view. (A3189; A3200 at 28:9-21; A2875-76 at ¶ 55; A3199 at 26:14-21.)⁷ If the Teflon diffuser "blocked radiation," then all radiation (reflected radiation and radiation from the device) cannot be measured by the sensor because "all radiation – direct and reflected – must make contact" with the Teflon diffuser. (A49.)

Lumalier argues: "a reasonable jury could easily agree with Dr. Peters that the Teflon cap positioned over the photodiode UV-C sensor in the accused product literally blocks all 'radiation that is from the emitter directly' from reaching the photodiode UV-C sensor." (Lumalier Br, p. 29.) Lumalier cites only to the Peters' expert report in its appeal. But, expert reports are not evidence that can be relied

⁷ In his Second Expert Report, Dr. Peters explained that the sensor is built from three components: a "photodiode," a "Teflon diffuser cap," and a housing. (A2875-76 at ¶ 55; A3199 at 26:14-21.) In his Third Expert Report, Dr. Peters recanted this position and claimed that the sensor is only the photodiode. But, during his deposition, Dr. Peters acknowledged that the patents-in-suit use the broader definition of sensor – not the narrow definition that is required for this argument of Lumalier. (A3223 at 109:18-21; A3215-3223.)

upon to defeat a summary judgment motion. *Harris v. J.B. Robinson Jewelers*, 627 F.3d 235, 239 n.1 (6th Cir. 2010) (declining to consider an unsworn expert report. “The report is not sworn, nor is it made under penalty of perjury. Accordingly, it cannot be considered on summary judgment.”).

On page 29, Lumalier cites the Peters' expert report only because Dr. Peters testified to the contrary. (A3189.) Dr. Peters testified that UV-C directly from the device contacts the Teflon diffuser and is measured by the photodiode.

Q. So if the Teflon diffuser cap is in direct sight of the lamps, light directly from the lamps gets into the sensor?

A. After hitting the diffuser, yes, after being diffused by the diffuser. So it is not reflected, it's transmitted and diffused. But it is not directly from the tube to the sensor, it is re-radiated by the Teflon cap.

Q. And you will agree with me sir, that the Teflon cap is part of the device?

A. It's part of the – well, it's part of the device, yes.

(A3198-3199 at 25:17-26:2.)

Q. And the – I want to make sure that it's clear that your opinion is that light travels directly from the UV-C lamps to the sensor assembly?

A. Yes, absolutely that is true.

(A2674 at 17:13-17.)⁸

⁸ Dr. Peters also admitted the Teflon diffuser is in direct sight of the lamps and that: “[L]ight incident on the portion of the Teflon cap adjacent the quartz photodiode window may be measured by the photodiode UV-C sensor.” (A2755 at ¶ 148; A3189.)

To the extent Lumalier is making an argument similar to that made to the district court that the Teflon diffuser somehow changes the radiation that is “from the UV-C device directly” to reflected radiation or some other type of radiation – that argument is flawed. First, Dr. Peters testified this radiation “is not reflected, it’s transmitted and diffused.” (A3198, 25:17-23.) Second, the existence of such radiation (no matter what Lumalier calls it) prevents a determination of the quantity of reflected radiation as only total radiation is measured. The testimony of Dr. Peters confirms this. (A49-51.)

This convoluted argument of Lumalier relies on improperly construing “sensor” and re-construing “reflected radiation.”⁹ There is no basis for Lumalier’s arguments as found by the district court. (A49-51.)

D. The District Court Properly Dismissed Lumalier’s Claims Of Infringement Under The Doctrine Of Equivalents

Lumalier labors in its appeal brief over an argument that received little treatment in its briefing submitted to the district court. To the district court, Lumalier identified four items of evidence: (a) certain testimony of Mark Statham, (b) pages 44-46 of Peters’ Third Report, (c) a photodiode assembly specification and (d) IPT Control Flowchart. (A2985.) Then, Lumalier argued: “At least this evidence on the record would allow a jury to reach the conclusion that the term

⁹ The district court explained to Lumalier that: “Radiation *transmitted* from one part of the device to another part, is not reflected radiation.” (A49.)

‘measure’ is met by the accused products under the doctrine of equivalents.” (*Id.*)

This evidence is insufficient and is not included in the lengthy doctrine of equivalents argument now presented on appeal.

Lumalier now claims that “the accused IPT products perform substantially the same function in substantially the same way to achieve substantially the same result as the sensors identified in the ‘424 and ‘177 Patents. (A2776).” (p. 33.)

Lumalier’s citation is to the following paragraph in an expert report of Dr. Peters.

212. As stated above, it is my opinion that the IPT Products literally infringe each of the asserted claims of the Patents at issue. However, in the event the Court finds that certain of the limitations of the asserted claims in the Patents at issue are not literally met by the IPT Products, it is further my opinion that the IPT Products infringe these asserted claims under the Doctrine of Equivalents because any differences between the IPT Products and the limitations of these asserted claims are insubstantial. This is evidenced in large part by the fact that the IPT Products perform substantially the same functions, in substantially the same way, to achieve substantially the same results.

An expert report is not evidence. *See Harris*, 627 at 239 n. 1. Moreover, the conclusory statement by Dr. Peters is insufficient to present an equivalents position. *See, Regents of Univ. of Minn. v. AGA Med. Corp.*, 717 F.3d 929, 941 (Fed. Cir. 2013) (holding that expert testimony on equivalence was “a conclusion supported by no explanation or reasoning,” and therefore inadequate.). “Conclusory expert assertions cannot raise triable issues of material fact on summary judgment.” (*Id.*)

On appeal, Lumalier has learned that its prior presentation was insufficient, but an appeal is not the appropriate place to introduce a new equivalence argument for the first time. “Appellate courts do not consider a party’s new theories, lodged first on appeal . . .” *Sage Prods.*, 126 F.3d at 1426 (“This court does not ‘review’ that which was not presented to the district court.”).

1. Equivalence For A Sensor That Measures *Total* Radiation Is Precluded

As noted above, many of the asserted claims include that the sensor “receive reflected radiation” and separately “measure reflected radiation.” (Claims 1 and 3 of the ‘424 patent, Claim 1 of the ‘177 patent. Lumalier seeks to eliminate “measure reflected radiation” from the claims by contending that any sensor that “receives reflected radiation” and other radiation will automatically and necessarily “measure reflected radiation.” (A24-25; A3212, 93:15-22; A2608 at 8.) Not only is this position contrary to the entire intrinsic record, but the doctrine of equivalents cannot be used to vitiate an entire claim element. *Freedman Seating Co. v. Am. Seating Co.*, 420 F.3d 1350 (Fed. Cir. 2005) (citing *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 25 (1997)). “The doctrine of equivalence cannot be used to erase meaningful structural and functional limitations of the claim on which the public is entitled to rely in avoiding infringement.” *Id.* at 1362.

a. Lumalier Argued That Measuring Reflected Radiation Is Novel And Critical To The Invention

On appeal, Lumalier argues that measuring total radiation is an equivalent to measuring reflected radiation. But, “[p]rosecution history estoppel precludes a patentee from obtaining under the doctrine of equivalents coverage of subject matter that has been relinquished during the prosecution of its patent application.” *Pharmacia & Upjohn Co. v. Mylan Pharm., Inc.*, 170 F.3d 1373, 1376 (Fed. Cir. 1999).

Lumalier argues that during prosecution, the applicant made no clear and unmistakable statements that would disclaim the accused IPT products. (Lumalier Br. p. 43.) But the record shows that numerous statements made in an attempt to distinguish the invention could not be any clearer. According to the Examiner Interview Summary discussing the non-final rejection, the applicant verbally explained that “*the present invention measures reflected radiation, as opposed to emitted radiation, in order to ascertain sterilization effectiveness.*” (A2038, emphasis added.) The written response following the interview contained similar and equally clear disclaimers.

Sensors that measure reflected radiation, rather than measuring UV-C radiation that is emitted directly from the emitters, control the operation of the device. Operational control by measuring reflected radiation is novel and unique to the device. This feature is critical to effective disinfection of an area such as a room.

(A2028, emphasis added.)

Lumalier implies that its statements could have some other reasonable interpretation, but this position strains credulity. In fact, Lumalier ignores these very statements in its appeal. Any competitor could only reasonably take these statements as a surrender of devices that measure total radiation. *Pharmacia*, 170 F.3d at 1377. The statements are clear: measurement of reflected radiation *rather than* direct radiation is required as it is the “critical feature” of the “present invention.” Statements such as those above espousing the “criticality” of a feature are clear and unequivocal. *Id.* at 1378 (holding that “rather than” comparative statements combined with an assertion that a claimed feature was “critical” constituted a relinquishment of the disclaimed subject matter).

As explained by the district court, “the public has a right to rely on such definitive statement made during prosecution . . . claims may not be construed one way to obtain their allowance and in a different way against accused infringers.” (A16-17) (citing *Spectrum Int’l, Inc. v. Sterilite Corp.*, 164 F.3d 1372, 1378-79 (Fed. Cir. 1998)).

b. A Sensor That Measures A Mixture Of Radiation Was Also Specifically Distinguished During Prosecution

On appeal, Lumalier argues that its scope of surrender is limited. (Lumalier Br, pp. 43-44.) But, Lumalier did surrender a sensor that *measures total* radiation – *i.e.* both direct and reflected radiation. As explained by the district court:

Applicant made a slightly different argument to distinguish Owesen. The examiner had rejected claims 3 and 4 of the patent as being anticipated by Owesen. Anticipation means that all limitations of the claim are present in the prior art. To overcome anticipation, applicant essentially argued that even though the Owesen sensor received some reflected radiation, it also received directly emitted radiation. Therefore, the Owesen sensor could not measure reflected radiation because the sensors could not distinguish between direct versus emitted radiation.

(A6.)

Lumalier argues on appeal that: “the ‘UV probe’ item described in Owesen is not shown in the drawings, and its location is not described in the specification.” (p. 43.) This is not accurate. Owesen explains, “upper portion 302a can be designed so as to comprise a UV probe sensing the output power from said UV tubes 304n.” (A2063 at 6:32-38.)¹⁰

No matter where the sensor is located on surface 302a of Owesen, it will receive some reflected radiation from the items in the room where it is located. As explained by the Examiner: “since the sensor of Owesen is located on the housing, it would inherently measure some reflected radiation, whether intended or not.” (A2038.) In order to obtain allowance, the applicant stated that “even if there is incidental reflected radiation that is received” there is “no indication in the

¹⁰ Like Owesen, the patents-in-suit do not show the sensors in the drawings. And, like Owesen, the IPT device includes sensors located in the upper portion.

reference that the reflected radiation is measured.” (A2031-2032.) In other words, if a mixture of radiation is received, a sensor does not measure *reflected* radiation.

But, Lumalier’s complaints regarding the particular teachings of Owesen are irrelevant. The applicant clearly stated that a sensor (whether in Owesen or not) that receives both reflected and direct radiation: (1) does not measure reflected radiation, and (2) “negates the ability” to sterilize a room. (A2031-2032.) This is not and cannot be disputed by Lumalier. This is certainly sufficient to prevent Lumalier from applying the doctrine of equivalents against a device that receives an indeterminate mixture of direct and reflected radiation.

Lumalier also argues on appeal that “It is equally unclear from Owesen if the UV-C probe receives only direct radiation, receives only reflected radiation, or receives a mixture of direct and reflected radiation.” (Lumalier Br, p. 43.) But still, there is no ambiguity. If Owesen received only reflected radiation, claim 3 would not have been allowed. The Examiner stated that Owesen would receive some reflected radiation (in addition to direct radiation) and ***this was acknowledged by the applicant.*** (A2038, A2031-2032.) The applicant stated clearly if there is reflected radiation received (in addition to direct radiation), then there is no indication of measuring reflected radiation. (A2031-2032.) The applicant’s statements do not lack clarity.

In *Spine Solutions, Inc. v. Medtronic Sofamor Danek USA, Inc.*, 620 F.3d 1305, 1317 (Fed. Cir. 2010), the applicant argued that its invention included a single anchor, and distinguished two anchor prior art. Similarly, in this case, the “Owesen [prior art] was distinguished on the ground that because it received a mixture of both direct and reflected radiation it could not measure reflected radiation.” (A17.) Thus, like the plaintiff was estopped from arguing a two anchor system was equivalent in *Spine Solutions*, Lumalier is estopped from arguing that an indeterminate mixture of reflected radiation and radiation directly from the UV-C device is equivalent in this case.

Lumalier seeks to argue ambiguity, but its statements were exceedingly clear.

A patentee may not state during prosecution that the claims do not cover a particular device and then change position and later sue a party who makes that same device for infringement. “The prosecution history constitutes a public record of the patentee’s representations concerning the scope and the meaning of the claims, and competitors are entitled to rely on those representations when ascertaining the degree of lawful conduct.”

Springs Window Fashions LP v. Novo Indus., L.P., 323 F.3d 989, 995 (Fed. Cir. 2003) (citation omitted).

c. The Specification Disavowed Relying On Radiation From The Device

The district court found further support in denying the doctrine of equivalents because the specification of the patents-in-suit expressly surrenders relying on both direct and reflected radiation.

Where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question.

SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1341 (Fed. Cir. 2001). In *SciMed* the Court noted that “at various points, the common specification of the three patents indicates that the claimed invention uses coaxial, ***rather than*** side-by-side lumens.” *Id.* at 1342 (emphasis added).

The present case is much like *SciMed* in that the applicant disavowed receiving and measuring direct radiation numerous times throughout the specification. Comparative “rather-than” statements in the written description criticize and disclaim receiving direct radiation.

“Summary of the Invention. . . By **relying on reflected doses rather than direct exposure**, the UVAS is able to sterilize or sanitize all surfaces within the room that are within view of an exposed wall or ceiling.” (A61, Col. 2, ll. 38-40).

The applicant was clearly aware of the possibility of direct radiation, but targeted the claims to what was the invention – measuring reflected radiation. “Having

specifically identified, criticized, and disclaimed the [prior art] configuration, the patentee cannot now invoke the doctrine of equivalents to ‘embrace a structure that was specifically excluded from the claims.’” *SciMed*, 242 F.3d at 1345.

2. Lumalier Never Presented Factual Evidence Of Equivalence

The doctrine of equivalents is a limitation-by-limitation analysis. *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 29 (1997) (“the doctrine of equivalents must be applied to individual elements of the claim, not to the invention as a whole.”). The accused device cannot perform the element at issue here because it has no ability to “measure reflected radiation,” nor perform any equivalent.

To the district court, Lumalier argued equivalence by claiming that the IPT device measures over 99% of reflected radiation. (A53.) Lumalier does not argue this on appeal because its expert admitted that his methodology was wrong, not once, but twice. (A2656-2660.) Indeed, Dr. Peters claimed that a specific operational test would be appropriate to determine infringement. (A2700-2703; A2716.) IPT performed that test, but Lumalier’s lawyers did not share it with Dr. Peters because it flatly contradicted his now twice withdrawn theories. (A2659-2660; 2720-2724.) Lumalier had no evidence to support the equivalence arguments presented to the district court.

Instead of appealing the district court’s summary judgment Order, Lumalier presents a function-way-result analysis ***never before presented***. (Lumalier Br, pp. 33-37.) But, it is well established that this appellate court reviews decisions and Lumalier failed to present any cognizable assertion of infringement under the doctrine of equivalents to the district court. “Appellate courts do not consider a party’s new theories, lodged first on appeal. . . . In short, this court does not ‘review’ that which was not presented to the district court.” *Sage Prods.*, 126 F.3d at 1426 (declining to consider a patentee’s new construction of terms on appeal of summary judgment of non-infringement). Lumalier has waived any position not presented to the district court. *Boss Control, Inc. v. Bombardier Inc.*, 410 F.3d 1372, 1380 (Fed. Cir. 2005) (holding that failure to present to the district court substantive arguments or evidence showing infringement under the doctrine of equivalents waived the issue).

Perhaps best illustrating this point is the following chart that repeats the “evidence” relied upon for Lumalier’s function-way-result analysis presented to the district court below and the “evidence” related to Lumalier’s new positions on appeal.

To The District Court (A2985)	To The Appellate Court (pp. 33-37)
A2771-2773, Peters Third Expert Report, pp. 44-46, ¶¶ 199-203.	A 2742, 2745, 2771, 2772, 2776, Peters Third Expert Report, ¶¶ 64, 85, 198 w, 201, 212
A2994-2996, Statham 11/14/12 Deposition, 195:16-22; 196:18-22, 199:23-200:2.	A2990-91, Statham 11/14/12 Deposition Transcript, pp. 20:13-15; 21:14-20
A3166, Photodiode specification.	A2780-81; 2787-88 Ex. 4A to Third Expert Report of Peters
A3167-3176, IPT Control Board Software	A3000-01; A2688 Peters 1/13/13 Deposition Transcript pp. 93:10-12; 94:8-14; 95:8-12.

A single paragraph, paragraph 201, of the unsworn expert report of Dr. Peters is the only common citation. (A2772.) And, this paragraph has to do with the “calculating” step of the claims, not measuring or the sensors.

Lumalier now relies on a combination of unsworn expert reports of Dr. Peters and deposition excerpts of Dr. Peters to cobble together this new theory presented on appeal. But, an expert report, which is not sworn and not made under penalty of perjury, may not be considered on summary judgment. *Harris*, 627 F.3d at 239 n.1. *See also, Pack v. Damon Corp.*, 434 F.3d 810, 815 (6th Cir. 2006) (declining to consider an unsworn expert report concerning issues of fact on summary judgment). *See also, Dole v. Elliott Travel & Tours, Inc.*, 942 F.2d 962, 968-69 (6th Cir.1991).

Second, the “baseline” theory that Lumalier ascribes to the deposition excerpts was never presented in an expert report. It was nothing more than an off-

the-cuff statement during a deposition without any support. The district court reviewed this testimony¹¹ and properly recognized that Dr. Peters was simply discussing what he could “figure out” over time. (A51.) The district court’s analysis – as well as Dr. Peters’ full testimony – is ignored by Lumliaer on appeal.

Lumalier again ignores the full testimony of Dr. Peters. Dr. Peters admitted: (1) the IPT device cannot “tell the difference” between reflected and direct radiation, (2) there is no baseline because the “IPT device has a system where certain lights are turned on and off,” (3) there is no baseline because the radiation emitted by UV-C bulbs “degrades over time.”¹² (A3191; A3211-3214, 92:2-95:21.) The district court addressed this testimony and held:

As an initial matter, Dr. Peters’ ability to ascertain the amount of reflected radiation has no bearing on the functionality of IPT’s device or this litigation; pertinent to this analysis is only the device’s ability. IPT’s device receives and measures, but cannot determine the quantity of direct radiation apart from reflected radiation.

Even if the device could ascertain the amount of reflected radiation that is transmitted to it, no evidence shows that the device only measures reflected radiation in calculating its bactericidal dose. As the applicant explained during patent prosecution, in its

¹¹ Lumalier did not present this testimony as part of a function-way-result analysis. (A2977-78.) Instead, Lumalier asserted that this established literal infringement.

¹² Peter’s admitted there is no baseline established by the IPT device. (A3212-3214 at 93:13-95:21) To the extent Dr. Peters made passing statements that “it would be possible to determine” such a baseline direct radiation value, he admitted that his baseline *constantly changes* – in other words, there is no baseline. (A3213-3214 at 94:2-95:21.) The accused IPT device actually creates a changing UV-C field strength during the field balancing procedure, the exact opposite of Lumalier’s new-found baseline theory.

specification, and claims, the critical feature in the patent is the device's ability to measure reflected radiation to sterilize a room.

(A51.)

Simply, there is no evidence that Lumalier presented below sufficient to establish an issue of material fact regarding equivalents. The equivalence theory presented by Lumalier below was incorrect as its expert acknowledged. Thus, Lumalier has never made a cognizable assertion of infringement under the doctrine of equivalents. Now, Lumalier seeks to belatedly cobble together a theory, but that is both procedurally improper and factually unsupported.

CONCLUSION

For the foregoing reasons, the Court should affirm the judgment of non-infringement of all asserted claims.

Respectfully submitted,

BROOKS KUSHMAN P.C.

/s/ Marc Lorelli
Marc Lorelli
Frank A. Angileri
1000 Town Center
Twenty-Second Floor
Southfield, Michigan 48075-1238
(248) 358-4400

Attorneys for Plaintiff-Appellee

Date: February 20, 2014

CERTIFICATE OF ELECTRONIC SERVICE

I hereby certify that on February 20, 2014, I electronically filed the foregoing APPEAL BRIEF OF PLAINTIFF-APPELLEE, INFECTION PREVENTION TECHNOLOGIES, LLC with the Clerk for the Federal Circuit Court of Appeals using the ECF System which will send notification to registered participants of the ECF System as listed on the Court's Notice of Docket Activity.

BROOKS KUSHMAN P.C.

/s/ Marc Lorelli

Marc Lorelli
Frank A. Angileri
1000 Town Center
Twenty-Second Floor
Southfield, Michigan 48075-1238
(248) 358-4400

Attorneys for Plaintiff-Appellee

**CERTIFICATE OF COMPLIANCE
PURSUANT TO FED. R. APP. P. 32(a)(7)(B)**

This brief complies with the type-volume limitation of Federal Rule of Appellate Procedure 32(a)(7)(B). The brief contains 12,655 words, excluding the parts of the brief exempted by Federal Rule of Appellate Procedure 32(a)(7)(B)(iii).

This brief complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the type style requirements of Federal Rule of Appellate Procedure 32(a)(6). The brief has been prepared in a proportionally spaced typeface using Microsoft® Word 2010 and Times New Roman typeface, 14-point.

Respectfully submitted,

BROOKS KUSHMAN P.C.

/s/ Marc Lorelli
 Marc Lorelli
 Frank A. Angileri
 1000 Town Center
 Twenty-Second Floor
 Southfield, Michigan 48075-1238
 (248) 358-4400

Attorneys for Plaintiff-Appellee

Date: February 20, 2014